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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/798,286

03/12/2004

Kenneth E. Davis

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08/11/2006

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EXAMINER

BANKHEAD, GENE LOUIS

ART UNIT

PAPER NUMBER

3744

DATE MAILED: 08/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/798,286	Applicant(s) DAVIS ET AL.	
	Examiner Gene L. Bankhead	Art Unit 3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03/12/04.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>03/12/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claims 10 and 15 objected to because of the following informalities:

The recitation "wherein the entire refrigeration system is mounted above the cabinet shell" is believed to be -- wherein the entire refrigeration system is mounted within the cabinet shell--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

Claim 8 and 9 rejected under 35 U.S.C. 112, second paragraph, as being indefinite in that it fails to point out what is included or excluded by the claim language. Applicant states in claim 8 lines 1-3 " said control system reduces the operational speed of the evaporator fan based on the operating speed of the compressor". It is not clear how the operational speed of the compressor affects the operational speed of the evaporator fan, i.e. does the evaporator fan speed depend upon the compressor speed increasing, decreasing, oscillating between ranges, or some other condition. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 16-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Whipple, III (US5711159).

With regard to claim 16 and 17, Whipple discloses a refrigerator control system 160 with a variable speed compressor 142, an evaporator 152, and variable speed evaporator fan 154. He further teaches a system capable of developing a flow of cooling air with in a compartment 172 of the refrigerator including sensing a temperature in the compartment, sensing an ambient temperature, and determining a desired operating temperature for the refrigerator based on a selected setting (column 5 lines 64-68 and column 6 lines 1-10 and 28-40).

He further teaches a system capable of varying an operational speed of the compressor based on the desired operating temperature and compartment temperature, and varying an operational speed of the evaporator fan based on the operational speed of the compressor (column 6 lines 28-40 and column 9 lines 13-20).

Regarding claim 18, Whipple teaches the control system maximizes the operational speed of the evaporator fan 154 when the system enters into an energy saving defrost stage (column 8 lines 47-60). It is inherent that a defrost mode would be selected as a result of detected evaporator and ambient temperature sensors. In addition Whipple teaches input signals are received from the system controller based on cooling demands such as defrosting (column 6 lines 28-38 and column 7 lines 8-10). Whipple further discloses the control system reduces operational speed of the evaporator fan based on the operating speed of the compressor, column 9 lines 13-20. Note, as the compressor speed decreases so does the speed of the evaporator fan.

In regards to claim 19 Whipple further teaches a variable speed stirring fan 148 and column 5 lines 40-46.

With regard to claim 20, Wipple teaches a control system capable of controlling the refrigeration system based on signals with at least one door open (column 5 lines 53-68).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 7-9, and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Whipple (US 5711159) in view of Kosko (US 6286326).

Regarding claims 1 and 11 Whipple teaches a refrigerator 100, with a cabinet shell (see Figure 1), including the following:

A fresh food compartment 110 and freezer compartment 120, a passage fluidly interconnecting the fresh food and freezer compartments, see Figure 1, and a variable position damper 130 in the passage capable of directing a flow of cooling air between the compartments, see Figure 1.

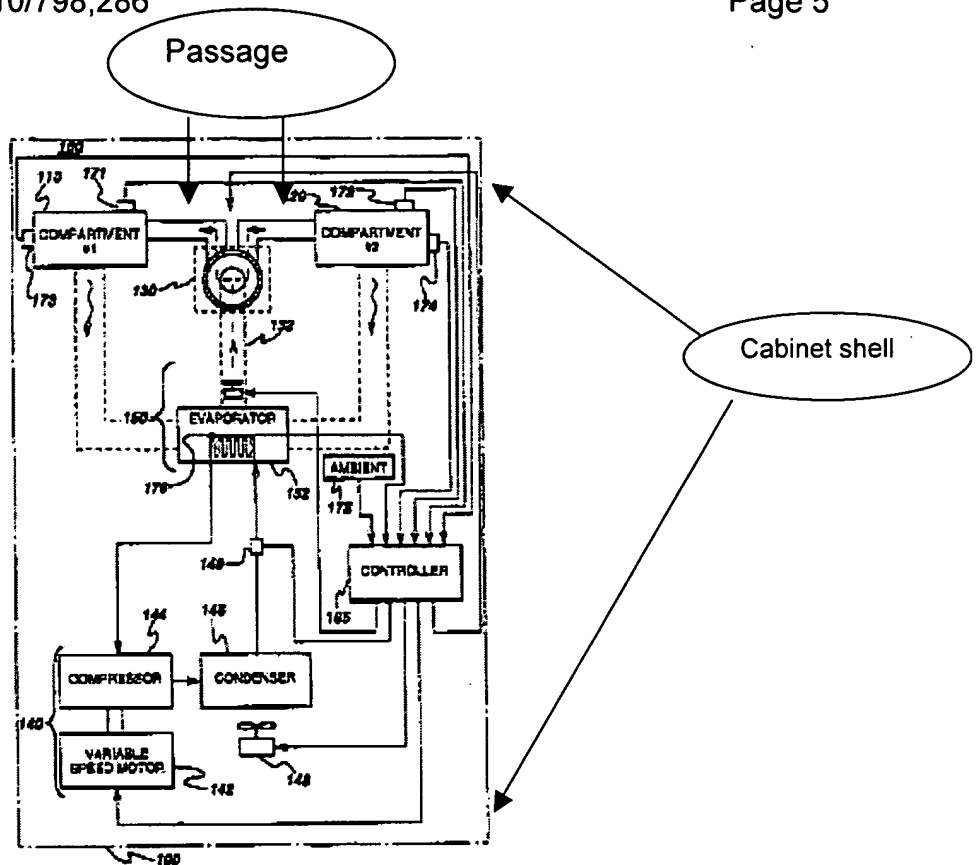


Figure 1 (US Whipple III 5711159)

Whipple discloses a refrigeration system, capable of cooling the freezer compartment, with a compressor 144, condenser 146, evaporator 152, and evaporator fan 154. He further teaches the compressor, evaporator fan, and stirring fan 148 are variable speed components (column 4 lines 1-5 and column 5 lines 40-47).

Whipple further teaches a plurality of sensors capable of detecting various operating parameters of the refrigerator (column 7 lines 4-9). Whipple further discloses a control system capable of altering a position of the damper and varying an operational speed of the compressor, evaporator fan, and stirring fan based on signals from the plurality of sensors (column 5 lines 22-46).

Though Whipple teaches a stirring fan he does not teach a fresh food compartment stirring fan in the fresh food compartment. Kopko teaches a refrigerator control system with a stirring fan 24 in the fresh food compartment 18. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Whipple refrigerator with the Kopko fresh food compartment stirring fan in order to circulate additional cool air throughout the fresh food compartment when needed to ensure food items do not spoil.

Regarding claim 2 and 5, Whipple discloses a temperature sensor 172 disposed in the freezer compartment capable of sensing the freezer compartment temperature (column 5 lines 50-55). He further discloses evaporator, fresh food compartment ambient air temperature sensors 176, 171, and 175 respectively.

With regard to claim 3, Whipple teaches the control system varies the operational speed of the compressor based on the freezer compartment temperature (column 5 lines 33-47).

Regarding claim 4, Whipple discloses a refrigeration system with a means for one to select a desired operating temperature, and vary the operational speed of a compressor based solely upon the freezer compartment temperature and a the desired operating temperature (column 6 lines 28 -50).

With regard to claim 7, Whipple teaches the control system maximizes the operational speed of the evaporator fan 154 when the system enters into an energy saving defrost stage (column 8 lines 47-60). It is obvious to one of ordinary skill in the art a defrost mode would be selected as a result of detected evaporator and ambient

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temperature sensors. In addition Whipple teaches input signals are received from the system controller based on cooling demands such as defrosting (column 6 lines 28-38 and column 7 lines 8-10).

In regards to claim 8, Whipple discloses the control system reduces operational speed of the evaporator fan based on the operating speed of the compressor, column 9 lines 13-20. Note, as the compressor speed decreases so does the speed of the evaporator fan.

In regard to claim 9, see the rejection of claim 4 as claims cite similar subject matter.

In regard to claim 12-14, see the rejection of claims 7-9, respectively, as claims cite similar subject matter.

Claim 6 is rejected under 35 U.S.C. 103(b) as being unpatentable over Whipple III as modified by Kopko in view of Alsenz (US 6857287).


Whipple as modified by Kopko teaches all limitations of claim 5 as previously stated. They, however, fail to teach an ambient temperature sensor directly adjacent to the condenser. Alsenz teaches a refrigeration system with an ambient air temperature sensor 50 directly beneath the condenser 30. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Whipple in view of Kopko with Alsenz in order to receive a more accurate measurement of the ambient air temperature in relation to the condenser temperature. This is advantageous because the temperature at which system refrigerant is condensed fluctuates with ambient air temperature.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gene L. Bankhead whose telephone number is (571)-272-8963. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571)-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


CHERYL TYLER
SUPERVISORY PATENT EXAMINER

GB
Examiner
Art Unit 3744